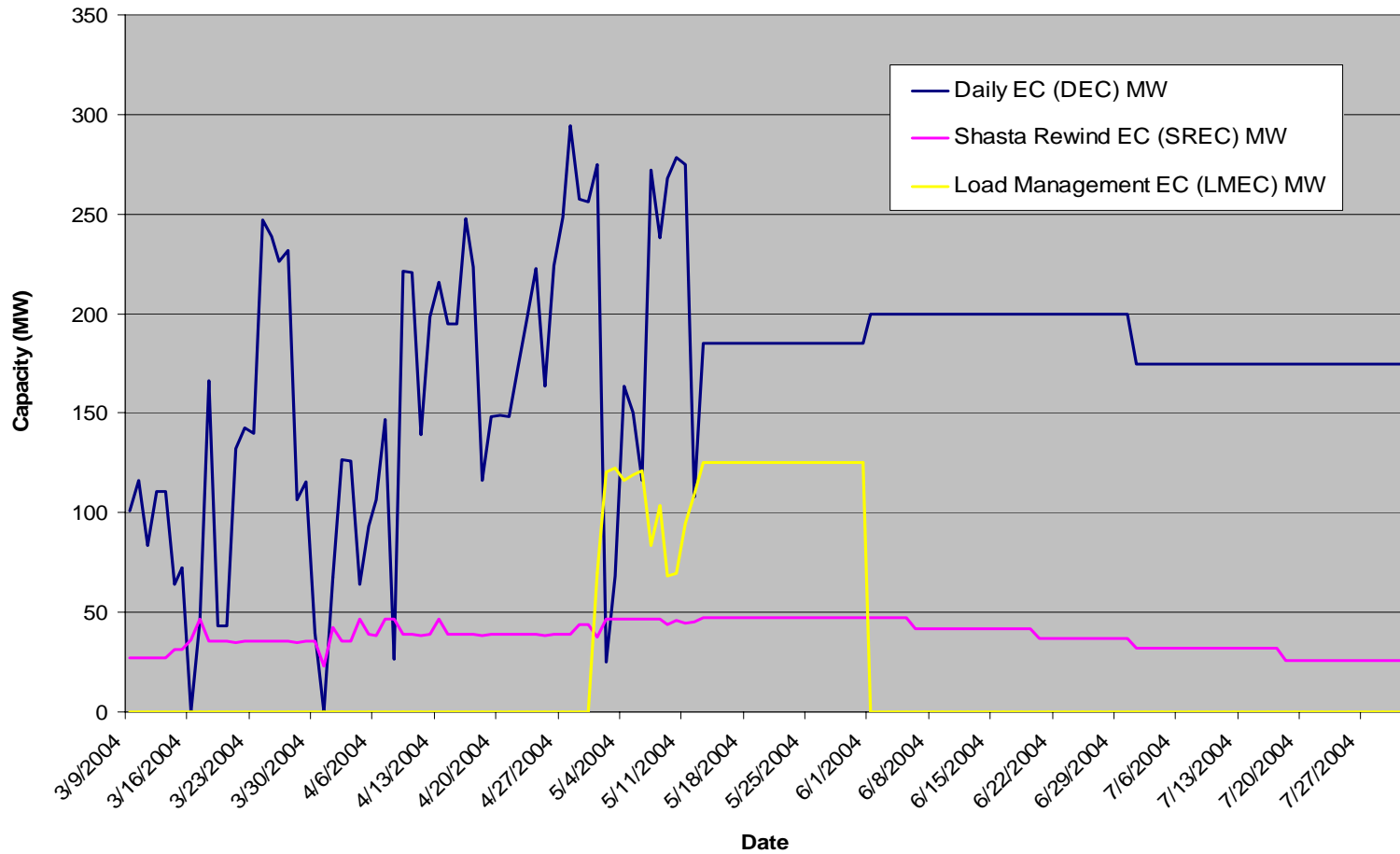


# Excess Capacity

## Historical and Projected Excess Capacity Sales



# Green Book 2004

Short & Long-Term Planning Tool  
for Supply and Purchasing  
Strategy Development

- Long-Term Analysis & FY02 Perspective
  - For long-term analysis the first step was to update CVP water operations data for period of record
    - 73 years of monthly historical hydrology data updated for current land use patterns
    - Current CVP facilities and upstream projects included in simulation
    - Latest CVP operational criteria, including CVPIA b(2), EWA and new Trinity SEIS Preferred Alternative flow targets were incorporated

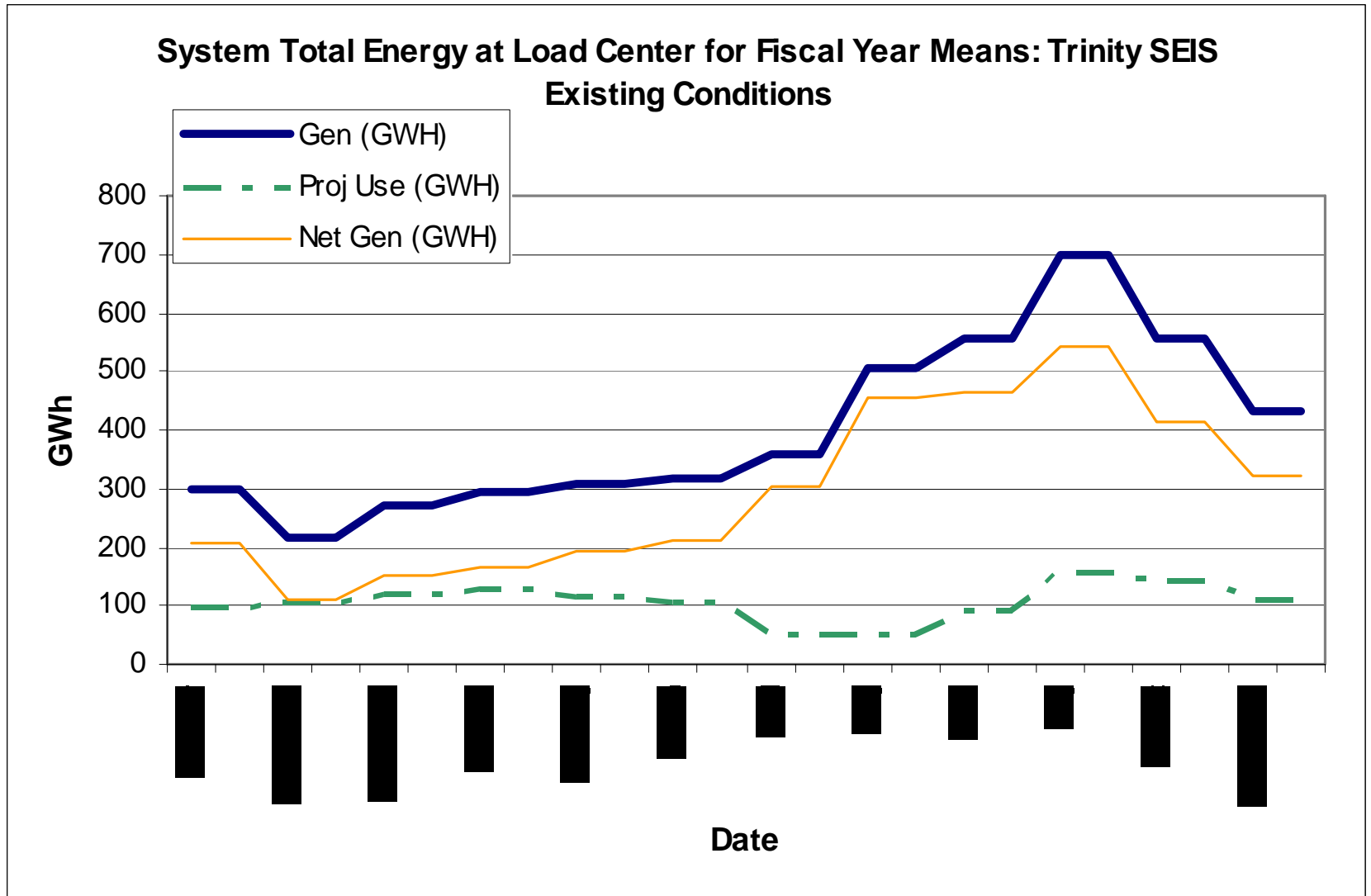
## – Determining CVP Power Generation

- Account for:
  - Current Project Use loads appropriate for each type of water year
  - First Preference loads
  - Regulation and Reserves for sub-control area
  - Q1 and Q4 forward purchases for Project Use and First Preference loads
  - Losses from generation to loads
- Determine remaining capacity and energy amounts available for Base Resource

## – Data Presentation

- Monthly capacity and generation data included for full 73 year trace
- Descriptive statistics, including:
  - Frequency distributions (relative and cumulative), for monthly net capacity and energy from the CVP, including mean, medium, standard deviation and variance
  - Probability, if any, of occurrence of a dry, average or wet year following any representative year
  - Flexibility to shape generation under certain flow criteria/generation levels – i.e., for given daily CVP generation amounts what percentage of generation will be available in on-peak hours

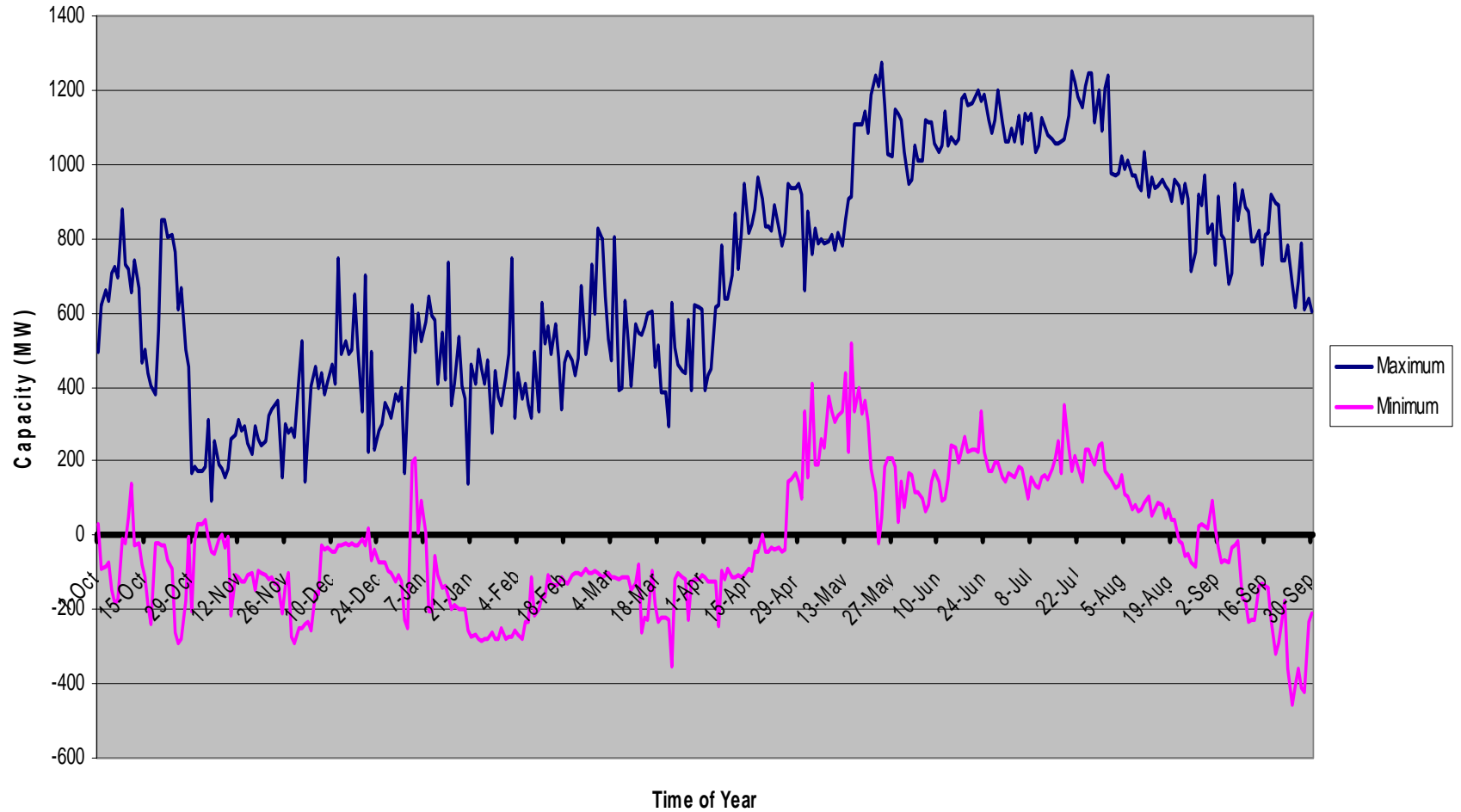
## Sample of available graphics from power model



## – FY02 Analysis

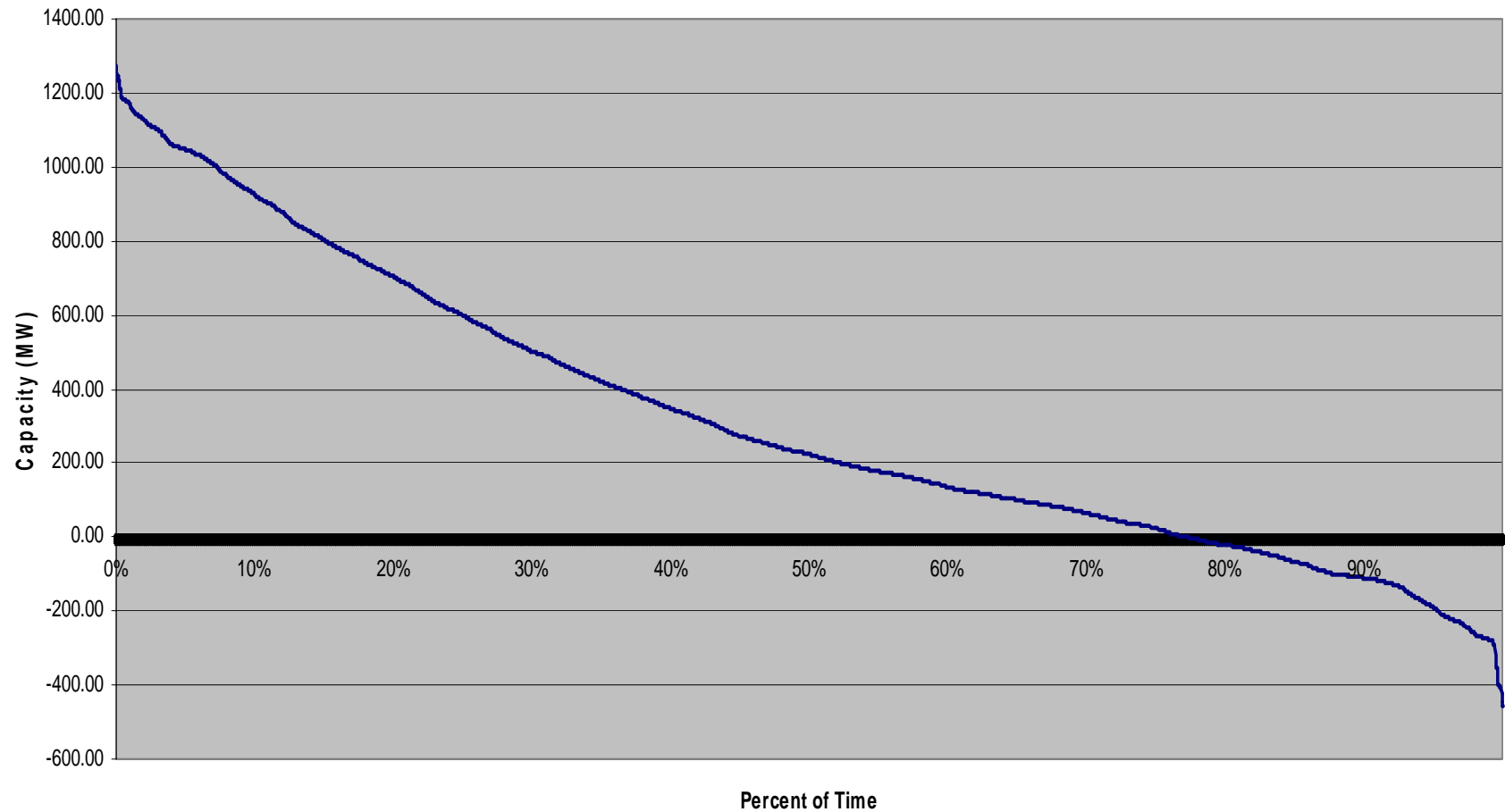
- Real hourly data available for analysis of generation capabilities of CVP system
- FY02 close to an average generation year
- Gen shifting model converts Contract 2948A operation to simulated post-2004 operation
- Generation shifted first to meet Project Use and First Preference loads, and shifted again to move generation into on-peak hours
- Based on FY02 data, analysis shows how much energy is needed for PU and FP loads and how much generation can be supplied in on-peak hours in each month under FY02 flow conditions

# Min/Max Daily Capacity (Or Deficit) Available For Base Resource After Project Use and First Preference Loads Are Met - FY02 Hourly Data





# Hourly Rank Ordered Capacity (Or Deficit) Available for Base Resource After Meeting Project Use and First Preference - Based on Historical FY02 Data



- Progress on 2004 Green Book
  - Water ops and monthly gen studies complete
  - FY02 gen shifting study complete
  - Descriptive statistics and graphing 80% complete
  - Write up 60% complete
  - Analysis and write up expected to be complete in a few weeks
  - Study results and write up will be posted on the web when complete

# Generation Forecasts

– Annual April 30<sup>th</sup> forecast

- Water supply known for summer and fall period
- 2004 Annual forecast sent to customers on April 29

– Rolling 12 month forecast

- Provided every month
- 10, 50 and 90 percent exceedence forecasts of available BR and AS for next 12 months
- First rolling 12 month forecast will be provided in September 2004

## – Weekly forecasts

- Forecast for next 7 days of hourly BR and AS provided every week beginning in December 2004
- Customers have asked that this forecast be provided by COB every Thursday

## – 3 Day ahead BR forecasts

- These forecasts will include min/max MW and total energy schedules for 24 hours three days ahead and be posted by 10:00 a.m. for VR customers
- The VR customers will have until 10:00 a.m. the next morning to provide their preferred schedules back to Western for determination of final schedules

- Western will aggregate all VR preferred schedules and add BR schedules for FLS customers, including any exchange program energy applied to BR schedules, and develop final schedules of BR for all customers
- Please note: the times specified for the 3 and 2 day ahead schedules are based on currently anticipated data exchange requirements. These times may change prior to or after January 1, 2005.

## – 2 Day ahead BR schedules

- These schedules will be provided by 5:00 p.m. two days ahead to VR customers
- The 2 day ahead schedules will include the final schedules of BR power including exchange energy and AS allocated to each customer

## – 1 Day ahead and day of updates

- If CVP generation has significantly changed from the 2 day ahead final schedules as a result of unplanned outages, changes in Project Use loads or other unforeseen circumstances, schedules of BR may have to be adjusted. If schedules are adjusted, VR customers not taking firming service will be notified at the earliest possible time